

REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 15-19 are pending in the present application. Claims 15 and 19 are amended by the present amendment. Support for additions to the claims can be found in the disclosure as originally filed, at least on page 29. Thus, no new matter is added.

In the outstanding Office Action, the drawings were objected to as including informalities; Claims 15-19 were rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement; Claim 19 was rejected under 35 U.S.C. §112, second paragraph, as indefinite; Claims 15-19 were rejected under 35 U.S.C. §103(a) as unpatentable over Kerfoot et al. (U.S. Patent 6,704,511, hereinafter Kerfoot) in view of Ryu et al. (U.S. Patent No. 6,330,384, hereinafter Ryu), Coa (U.S. Patent No. 6,731,877) and Hamada (U.S. Pat. No. 5,703,711).

Initially, Applicants wish to thank Examiner Wang for the January 26, 2009 interview, at which time the outstanding issues in this case were discussed. During the interview, Applicants presented arguments substantially as indicated in the present response. While no formal agreement was reached, the Examiner indicated that he fully understood the arguments presented, and would give further consideration to such arguments and any amendments when filed in this response.

With regard to the objection to the drawings, Claims 15 and 19 have been amended such that these claims correspond to the figures included in the disclosure. Thus, Applicants respectfully submit that the objection to the drawings is moot and respectfully request that the objection to the drawings be withdrawn.

With respect to the rejection of Claims 15-19 under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement and the rejection of Claim 19

under 35 U.S.C. §112, second paragraph, as indefinite, Applicants respectfully submit that Claims 15 and 19 have been amended to overcome the rejections. Specifically, as was discussed in the interview, Claim 15, and similarly Claim 19, has been amended to recite that the dummy signal optical multiplexer is configured to modify a gain of at least one non-modulated spectrum slice optical signal component in order to maintain a predetermined overall gain profile of the non-modulated spectrum slice optical signal components when no signal is available for amplification for one of the non-modulated spectrum slice optical signal components. Applicants note that support for this feature is found, at least, on page 29 of the originally filed disclosure.

Accordingly, Applicants respectfully request that the rejection of Claims 15-19 under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement and the rejection of Claim 19 under 35 U.S.C. §112, second paragraph, as indefinite, be withdrawn.

Addressing now the rejection of Claim 15 under 35 U.S.C. §103(a) as unpatentable over Kerfoot, Ryu, Coa, and Hamada, Applicants respectfully traverse this assertion.

Claim 15 recites, in part,

a dummy optical signal source device configured to generate the non-modulated spectrum slice optical signal, including:

...at least a first and second output optical amplifier, each having an input connected to an output of a respective one of the dummy signal optical multiplexers, and having respective outputs, and

a dummy signal optical multiplexer connecting the respective outputs of the output optical amplifiers to the optical multiplexer and configured to modify a gain of at least one non-modulated spectrum slice optical signal component in order to maintain a predetermined overall gain profile of the non-modulated spectrum slice optical signal components when no signal is available for amplification for one of the non-modulated spectrum slice optical signal components.

Claim 17 recites a corresponding method claim and Claim 19 recites a corresponding means claim.

Kerfoot describes a wavelength division multiplex optical signal including a WDM combiner to provide a source signal, at least one transmitter coupled to an input of the WDM combiner, a broadband noise source, and a filter coupled between the broadband noise source and another input of the WDM combiner. In one embodiment, the filter is an optical notch filter. In another embodiment, the filter includes a WDM demultiplexer coupled through plural filters to provide a plurality of noise signals, and a WDM multiplexer coupled through at least one of the plural filters to respective noise signals.

Ryu describes an optical system having a light source, couplers and amplifiers. Fig. 3 of Ryu shows a signal input terminal terminated without reflection.

Cao describes connecting an optical amplifier 24a to a multiplexer 28 via a dispersion compensating element 26a.

However, Kerfoot, Ryu and Coa do not describe or suggest a dummy signal optical multiplexer connecting the respective outputs of the output optical amplifiers to the optical multiplexer and configured to modify a gain of at least one non-modulated spectrum slice optical signal component in order to maintain a predetermined overall gain profile of the non-modulated spectrum slice optical signal components when no signal is available for amplification for one of the non-modulated spectrum slice optical signal components, as is recited in Claim 15.

Nevertheless, the outstanding Action asserts on page 9 that “using a controller to control an optical amplifier to set a gain to a predetermined profile is well known in the art,” and cites Hamada as evidencing this assertion.

However, as was discussed in the interview, Hamada does not specifically describe modifying a gain of at least one non-modulated spectrum slice optical signal component in

order to maintain a predetermined overall gain profile of the non-modulated spectrum slice optical signal components when no signal is available for amplification for one of the non-modulated spectrum slice optical signal components.

Although Hamada describes an optical amplifier that can amplify a signal, Hamada never goes into detail regarding what triggers this amplification (e.g. in the claimed invention the modulation is triggered when no signal is available for amplification for one of the non-modulated spectrum slice optical signal components) and does not describe that this amplification modifies a gain of at least one non-modulated spectrum slice optical signal component *in order to maintain a predetermined overall gain profile of the non-modulated spectrum slice optical signal components*.

The outstanding Action appears to assert on page 13 that Cao cures this deficiency of Hamada. Specifically, the outstanding Action appears to rely on the fact that Cao describes in col. 7, lines 1-6 that a first overall frequency band signal and a last overall frequency band signal are each respectively amplified to a predetermined level. However, Cao never describes *modifying a gain of at least one* non-modulated spectrum slice optical signal component in order to maintain a predetermined overall gain profile of the non-modulated spectrum slice optical signal components, *when no signal is available for amplification for one of the non-modulated spectrum slice optical signal components*.

Moreover, Applicants note that it would not be obvious for one skilled in the art to develop such a system independent of the disclosure of the claimed invention at the time the application was filed. Specifically, the claimed invention is a unique invention that has significant industrial application. The specific features of the claimed invention were not known to those of ordinary skill at the time of the invention and, as a result, none of the cited references discloses the detailed features recited in the claims.

In addition, as is noted in MPEP §2141, “the key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of *the reason(s)* why the claimed invention would have been obvious. The Supreme Court in KSR noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit. The Court quoting *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006), stated that “[R]ejections on obviousness ***cannot be sustained by mere conclusory statements***; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” KSR, 550 U.S. at ___, 82 USPQ2d at 1396” (emphasis added).

In the present case, although Hamada and Cao describe amplifying signals there is no description or suggestion of modifying a gain of at least one non-modulated spectrum slice optical signal component in order to maintain a predetermined overall gain profile of the non-modulated spectrum slice optical signal components, ***when no signal is available for amplification for one of the non-modulated spectrum slice optical signal components***. This is the case, at least, because these references are not concerned with maintaining a predetermined overall gain profile when certain signals are not available.

Accordingly, Applicants respectfully submit that Claims 15 and 17, and claims depending therefrom, respectively, patentably distinguish over Kerfoot, Ryu, Cao and Hamada considered individually or in combination.

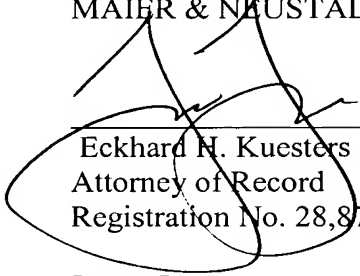
Consequently, in view of the present amendment and in light of the previous discussion, Applicants respectfully submit that the present application is in condition for allowance and respectfully request an early and favorable action to that effect.

Respectfully submitted,

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